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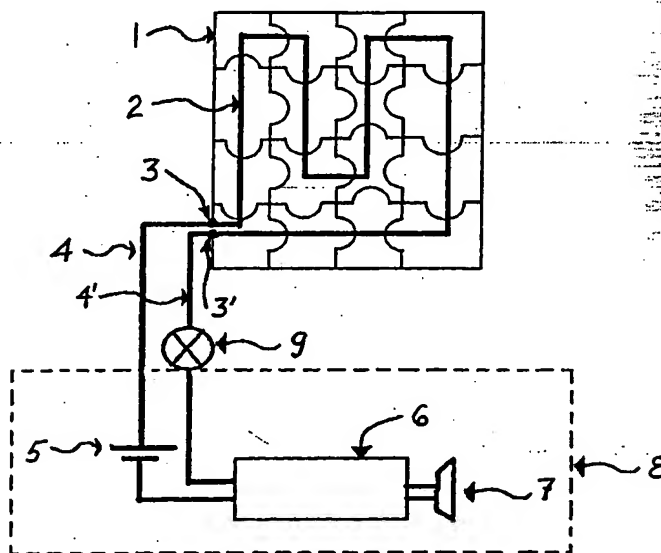
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(54) Title: A JIGSAW PUZZLE SYSTEM



(57) Abstract: A jigsaw puzzle system, comprising: (a) a plurality of interlocking puzzle pieces, each of which contains an electrical conductor, located either on the bottom surface of said piece, or within the material of each piece, wherein a closed electrical circuit is created when all said puzzle pieces are placed correctly in conjunction with said matching puzzle pieces; (b) means for connecting the end of said electrical conductors on or within one or two of said puzzle pieces to pair of conductors and to a power source; (c) means for indicating a closed operated electrical circuit connected to the power source and to one of the ends of the electrical conductors on or within said puzzle pieces; (d) a power source, electrically connected to one of the ends of the electrical conductors of the puzzle and to the means for indicating the closed operated electrical circuit.

A JIGSAW PUZZLE SYSTEM

FIELD OF THE INVENTION

The present invention relates to a jigsaw puzzle giving audio-visual feedback upon the completion of a puzzle. More specifically, the present invention relates to a jigsaw puzzle whereby upon completion of a puzzle, will result in a closed operated DC circuit, the result of which will display flashing lights and/or will generate a predetermined audio program.

BACKGROUND OF THE INVENTION

Jigsaw puzzles have been well known as entertaining and educational toys for many years all over the world. Jigsaw puzzles, as well as all puzzles, are recognized for the entertainment which they provide. They also provide educational value through the aiding of development of memory, pattern recognition, and of hand/eye coordination, especially in young children. Given the positive nature of puzzles, more incentive to encourage their use is needed. All puzzles require from the child concentration, patience, effort, and focus on an achievable goal. To encourage a child to master these skills, a puzzle should provide a commensurate reward. However, prior embodiments of puzzles, are lacking, insofar as no positive feedback is received when the puzzle is successfully completed. This lack of reward for solving a puzzle may generate disinterest in a puzzle, which leads to the loss of benefits

which can be derived from the effort involved in puzzle solving. To encourage the use of puzzles in young users, positive feedback, such as a congratulatory audio or visual sign or message, is desirable to be included in the puzzles.

SUMMARY OF THE INVENTION

The present invention relates to a puzzle system which provides feedback after the completion of the puzzle in the form of one or multiple positive rewards including, but not limited to flashing lights (available in all colors) and/or an audio response such as music and/or speech production. This feedback enhances the desire of completing the puzzle, and stimulates repeated usage. The puzzle system, according to the present invention, is made from a plurality of interlocking pieces, which have to be assembled together (as in any puzzle) in a specific manner to solve said puzzle. The puzzle system in the present invention is characterized by having electrical conductors located within the material of each of the puzzle pieces, or upon the bottom surface of each of the puzzle pieces. The electrical conductor is a metal wire, or a flat metal strip, or electrically conductive paint, or any other suitable conductive material. As said puzzle pieces are assembled, a closed operated DC electric circuit is created by the correct alignment and connection of said conductors found within or on the bottom surface of the pieces. The

conductors from any puzzle piece may be fastened to the conductors of any adjacent matching puzzle piece by being inserted into grooves or channels located on the bottom surface or within the puzzle piece. One or two of the puzzle pieces are connected to means (e.g., plug or socket) for connecting, by any conductive wire, the circuit to the power source (e.g., a 3-9 volt battery), light bulbs, sound generation device, amplifier, and speaker, typically by any standard insulated electric wire. In the present invention, the word "sound" relates to speech, music, etc. The preferred embodiment includes a light display, which can be multi-colored, flashing light, and in varying shapes. In another preferred embodiment, the sound generation device can provide for a congratulatory message, music, sound effects, or any combination thereof. The preferred power source is a 3-9 volt battery. In another preferred embodiment, the sound generation device, the battery, the amplifier, the light bulbs, and the speaker are integrated within, or within the top or bottom surface of any puzzle piece or pieces. Completion of the puzzle closes the operated DC circuit, which results in current flow and activation of said audio/visual devices.

BRIEF DESCRIPTION OF THE DRAWING

Figure 1 illustrates the puzzle system according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

The puzzle pieces are comprised of, but not limited to, a flat sheet, preferably made from cardboard or wood, which has been cut into a plurality of interlocking units.

Said pieces contains within them, or have affixed (e.g., inside grooves, or by glue) to the bottom surface thereof, an electrical conductor such as but not limited to a wire, a flat metallic strip, or electrically conductive paint. Said conductor provides a continuous electrically conductive line between the pieces of the puzzle when placed in the correct position relative to other pieces. The end point of said electrical conductor, located on or within any of said puzzle pieces, may contain electrical conductivity enhancement such as protrusion and/or channel of said electrical conductor to effect positive contact between two adjacent electrical conductor surfaces.

One or two said puzzle pieces provide means (e.g., plug or socket) for connection, by wire conductor, to the battery, light bulbs, amplifier, voice or music generator/synthesizer and speaker. In another preferred embodiment, one (or more) puzzle piece may have integrated within, or within the top or bottom surface, the battery, light bulbs, speech and/or music generator/synthesizer, amplifier, and speaker.

The present preferred embodiment will be further described as relating to Figure 1. This description by no means intends to limit the scope of the invention, but to clarify and illustrate one of the preferred embodiments of the invention.

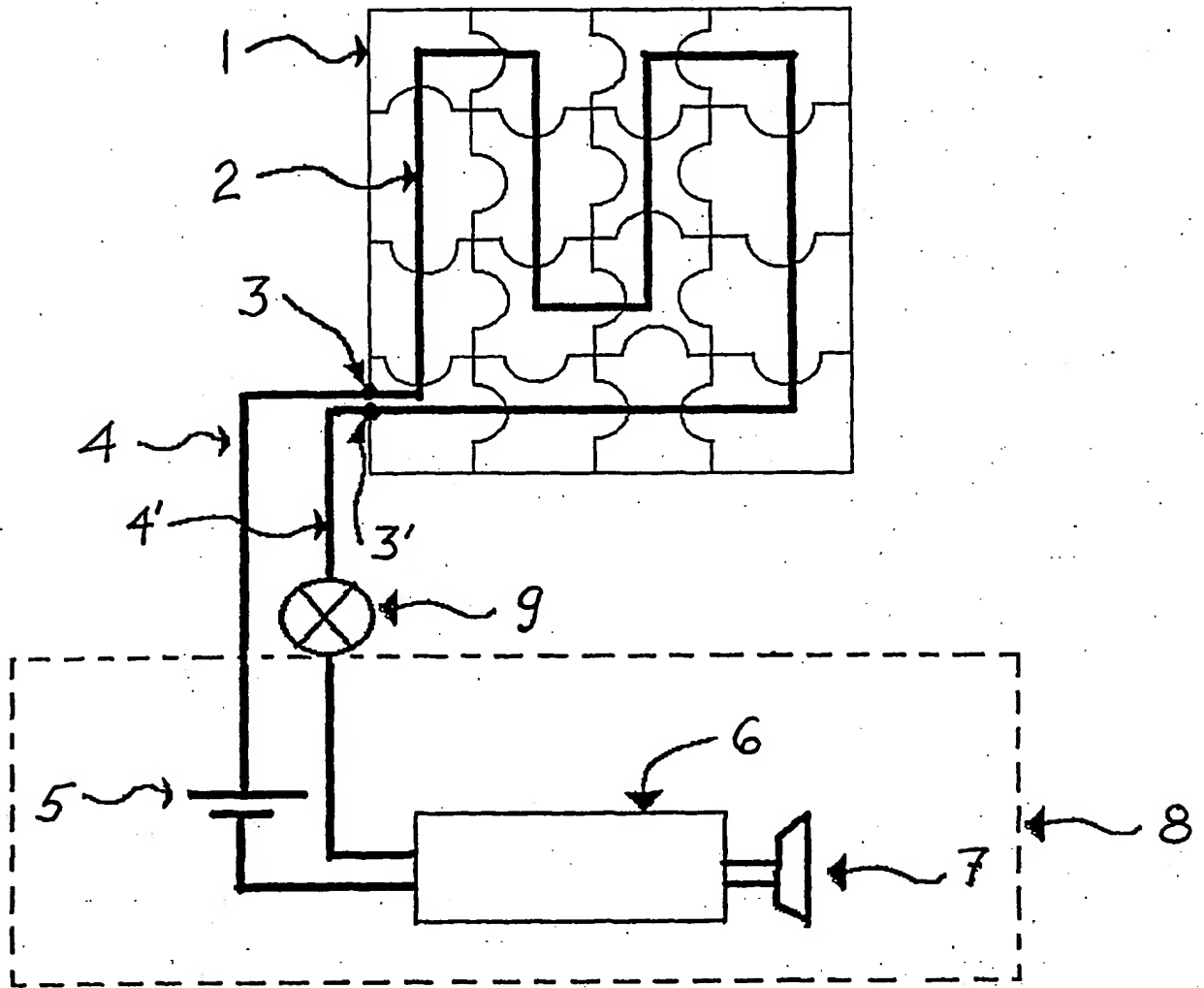
Figure 1 describes a plurality of puzzle pieces (1); an electrical conductor (2) is located within or on the bottom surface of each puzzle piece; connection means (3), such as a plug or socket, are located on one puzzle piece; connection wires(4) extending from the puzzle to the battery, light bulbs, speech and/or music generator, speaker, and also amplifier; a battery (5); a speech and/or music generator/synthesizer and amplifier (6); a speaker (7); a housing (8) containing light bulbs (9), and the above mentioned amplifier, speech and/or music generator/synthesizer, speaker, and also the battery . As mentioned, the battery(5), the speech and/or music genreator/synthesizer and amplifier(6), the speaker (7), and the light bulbs (9), may be integrated within one or more puzzle pieces.

CLAIMS

1. A jigsaw puzzle system, comprising:
 - a) a plurality of interlocking puzzle pieces, each of which contains an electrical conductor, located either on the bottom surface of said piece, or within the material of each piece, wherein a closed electrical circuit is created when all said puzzle pieces are placed correctly in conjunction with said matching puzzle pieces;
 - b) means for connecting the end of said electrical conductors on or within one or two of said puzzle pieces to pair of conductors and to a power source;
 - c) means for indicating a closed operated electrical circuit connected to the power source and to one of the ends of the electrical conductors on or within said puzzle pieces.
 - d) a power source, electrically connected to one of the ends of the electrical conductors of the puzzle and to the means for indicating the closed operated electrical circuit.
2. A jigsaw puzzle system, according to claim 1, wherein the means for indicating a closed operated electrical circuit are selected from light bulbs, amplifier, music and/or speech generator, and speaker.

3. A jigsaw puzzle system, according to claim 1, wherein the power source has a voltage from 3 to 9 volts DC.
4. A jigsaw puzzle system, according to claim 1, wherein a piece of said puzzle is characterized by having an electrical conductor located either within the puzzle piece or on the bottom surface.
5. A jigsaw puzzle system, according to claim 1, wherein the electrical conductor is a metal wire, conductive paint, or a flat metal strip.
6. A jigsaw puzzle system, according to claim 1, wherein the power source, the light bulbs, the amplifier, the speech and/or music generator/synthesizer, and the speaker, are integrated within, or within the top or bottom surface of any puzzle piece or pieces.
7. An interlocking puzzle piece for use in the jigsaw puzzle system, according to any of the preceeding claims, characterized by having an electrical conductor, located either on the bottom surface of said piece, or within the material of each piece.
8. An interlocking puzzle piece for use in the jigsaw puzzle system, according to any of the preceeding claims, characterized by having integrated within, or within the surface of the puzzle piece, a power source, a light bulbs, an amplifier, a speech and/or music generator/synthesizer, and a speaker,

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*Figure 1.*

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IPC 7 A63F9/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A63F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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